

Prevalence and Fungicidal Activity of Endophytic Micromycetes of Plants in Kazakhstan

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Abstract : Endophytic microorganisms are presented in plants of different families growing in the foothills and piedmont plains of Trans-Ili Alatau. It was found that the maximum number of endophytic micromycetes is typical to the Fabaceae family. The number of microscopic fungi in the roots reached $(145.9 \pm 5.9) \times 10^3$ CFU/g of plant tissue; yeasts - $(79.8 \pm 3.5) \times 10^2$ CFU/g of plant tissue. Basically, endophytic microscopic fungi are typical for underground parts of plants. In contrast, yeasts more infected aboveground parts of plants. Small amount of micromycetes is typical to inflorescence and fruits. Antagonistic activity of selected micromycetes against *Fusarium graminearum*, *Cladosporium* sp., *Phytophthora infestans* and *Botrytis cinerea* phytopathogens was detected. Strains with a broad, narrow and limited range of action were identified. For further investigations Rh2 and T7 strains were selected, they are characterized by a broad spectrum of fungicidal activity and they formed the large inhibition zones against phytopathogens. Active antagonists are attributed to the *Rhodotorula mucilaginosa* and *Beauveria bassiana* species.

Keywords : endophytic micromycetes, fungicidal activity, prevalence, plants

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